

## Auction Of Electronic Parts And Gear Feature Of PPRAA Meeting On Evening Of February 9

Every February (at least for the past ten years, which is as far back as the master file of Zero Beat in the editor's hands goes) meeting of the PPRAA has been devoted to an auction of used electronic parts and gear (and sometimes even back copies of amateur radio magazines such as QST, CQ, etc.) which has resulted in the opportunity for PPRAA members to clean the unused parts and gear out of their junk boxes and the opportunity for other members attending the auction to acquire, often at a fabulously low price, some gear, a part, or parts needed, perhaps, to finish a project or complete a planned change in the station or rig.

The February 9 PPRAA meeting will be no exception to this established procedure---it will again be an evening of the pleading voices of the club's auctioneers and the competitive bids of those present, vieing to get the gear or part being auctioned at the time.

As with other PPRAA meetings, the auction night meeting will be held in the lower level of the Security Savings and Loan Building, East Platte and Union Boulevard.

As usual, the part of the meeting to cover any business prior to the actual auction will start at 7:30 p.m., and as usual the doors will be open at 6:30---this time this early opening will allow those with material they wish to sell to arrive early with that material and get it ready for the auction.

Persons who have been PPRAA members for at least a year are aware of the rules for auction night. However, as a reminder for them and for the benefit of any new members of the club, here are the "rules" under which the auction is conducted:

1. Anything electronic in nature (as well as the forementioned amateur radio magazines, etc.) will be auctioned.

2. The club will retain ten per cent of the selling price of the items sold to defray the costs of running the auction.

3. Each item to be sold must be tagged with the name and call of the seller. Also if the seller has a minimum price he feels he will accept for the particular item--especially in the case of any gear to be auctioned--this should also be noted on the tag for the benefit of whom ever is conducting the auction at the time the item comes up for bid.

4. There will be a member designated (probably Ida Demario, WA0NTA) who has handled this task for several auctions, who will keep track of the various items sold, their selling price, receive the cost of the item from the successful bidder and note the owner of the item sold.

5. After all of the details of the auction are cleared, the seller will be mailed a check for the items sold (less the previously named ten per cent of the selling price which will go into the club treasury.)

As February starts--make the following plans:

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## Station Move 'Falls Through', WA0VTU Still In Same Place, Future Move Is Planned

Contrary to the story which appeared in last month's Zero Beat, the club station, W0VTU, in the American Red Cross Center, was not moved over the New Year weekend as planned.

One of the reasons for planning the move of the station so that a larger space would be available was the planned donation of an extra transceiver to the station by Steve (not Bill as it appeared in last month's Zero Beat story) Gaiser, WB0CNC.

Steve was unexpectedly transferred to Fairmont, Minn., and left, taking the transceiver with him, hence the club didn't get the extra transceiver--one of the things around which the move was centered.

According to the latest news, the station may be moved, however the direction will be down, not up. It seems that the construction of an outside fire escape facility, which is necessary if the upper floors are to be put to use, has proven to be a too costly project to construct.

The upper floors, therefore, are to be used for storage facilities only. The station, therefore, has to be moved.

Present information is that it is to be moved to the lower level of the building in the room which was used as a kitchen. Members of the PPRAA at

(Continued on Page 3)

## Another Amateur Expresses His Ideas About Worth Of ARRL And Its Activities To Hams

(Since in the January Zero Beat we reprinted the opinion of one man--Dr. Morris Levinson, WB0BSV--regarding the ARRL and its activities which appeared in the Peublo Ham Club "Grid Leak," we feel it only fair to reprint, from another amateur radio club publication, the opinion of another amateur radio operator on the ARRL.

(This month's reprint is the "opinion" of Archie Willis, W6LPJ, which appears in the January 1972 "Circle" of the Central California Radio Council, reprinted in that publication from the "ARNS Bulletin" and the "SFRC News."

(By reprinting these two somewhat differing opinions, we feel we are providing Zero Beat readers the chance to consider "both sides of the question"

## Three State QSO Party Planned March 25-26 By Rocky Mt. Amateurs

A 1972 Rocky Mountain QSO Party, sponsored by the Denver Radio Club, and the Radio Clubs of New Mexico and Wyoming has been scheduled for March 25 and 26, according to an announcement in "The Round Table" of the DRC.

Information on the party, as it appears in the January "The Round Table" is as follows:

"1. The states participating in this QSO Party are Colorado, New Mexico and Wyoming. East State is having a separate QSO Party.

"2. The contest periods are from 2200Z on March 25 to 0100Z on March 26; -00Z to 0600Z and 1800Z to 2200Z on March 26, 1972.

"3. Frequencies - CW 65 kHz up from the bottom. Phone near the edge between General and Advanced. Novice near the middle of the band. Stations outside the Rocky Mountain area please refrain from calling CQ on contest near these frequencies.

"4. Exchange - serial number, RDT, state and county for stations inside the Rocky Mountain area, while those outside the area may omit the county. Stations may be contacted on each band, and again if a county has changed. Note that both CW and phone contacts are not permitted. Intraregion and interstate contacts are valid.

"5. Scoring - 1 point per QSO. For Rocky Mountain Region stations, the multiplier is the sum of States, VE Provinces, countries and Rocky Mountain counties. For stations outside the region, the multiplier is the number of counties in the state in whose party he is participating. There will be three different multipliers, one for each state, for those that enter all three contests.

(Continued on Page 5)

in forming their own opinion on this subject. ---Frank, W0HWH)

### "DO I OR DON'T I?"

By Archie Willis, W6LPJ

The question of "Do I or Don't I" is an old one to many of us. From childhood we are confronted with organized groups that we are urged to join, large and small.

Amateur Radio is one of the largest brotherhoods in the world, but is composed of solitary people who usually operate alone. When several of these solitary Hams get together and form a group, there is usually instant compatibility--no matter what their age, sex or color--they are united in the inter-

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Clarence (Frank) Craw, WØHWH, Editor  
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Telephone 634-4751

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**EDITORIAL*****Our Thanks To A Fine Club And Fine Writer***

With the more and more important role of computers in Amateur Radio, we are starting in this issue of Zero Beat the first of a four part series on "Understanding Computers" written by Robert "Bob" Shriner, WAØUZO, which originally appeared in issues of the Pueblo Ham Club's "Grid Leak" last year.

Bob and his XYL Ollie, WAØWAD, in addition to being active in the Pueblo club, have been long-time and very active members of the PPRAA and have been of great aid to the PPRAA in many

of its activities, including the two Rocky Mountain Division Conventions so successfully staged by the PPRAA in 1966 and 1971.

Bob is a very prolific, understandable and knowledgeable writer on many phases of Amateur Radio construction and electronics. This is evident from the many articles written by him which have appeared in Grid Leak and which we feel should be shared with the readers of Zero Beat.

Following the series on computers which we will reprint in this and the

***'We Never Had It So Good' Says One Writer***

(This month's "guest editorial" is by Carl C. Drumeller, W5JJ, and is reprinted from the "Collector and Emitter" of the Aeronautical Center Amateur Radio Club of Oklahoma City).

In this Year of our Lord Nineteen-hundred and seventy-two and the Year of our ARRL fifty eight, we amateurs of radio have much to be thankful for.

We have a federal government that allows us all reasonable privileges of radio operation. We have an FCC that imposes only modest restrictions upon our operating practice. We have a League that unceasingly works for the good of amateur radio.

We are in a portion of the sun-spot cycle that permits wonderful operation on the lower portion of the Medium Frequency band (1.8 - 2.0 MHz) open to us. Yet, with this, the upper two of our HF bands (21 MHz and 29 MHz) still are open much of the time. A pleasant part of the cycle, indeed!

We have a wide selection of manufactured equipment available to us at quite reasonable prices. Inflation has hit amateur radio very gently! Although we complain about the paucity of parts available for home construction pro-

jects, these can be obtained if one searches long enough . . . and in the right places.

Almost every facet of radio communication is being explored by amateurs. Radiotelegraphy remains in considerable use. Radioteleprinter is riding high in popularity. Slow-scan radiotelevision is experiencing ever increasing interest. The Very High Frequencies are being used for many modes of radiotelephony: Frequency modulation or several deviations; Amplitude modulation both with two sidebands and carrier and with one sideband and no carrier; relay of pulse signals (telephone dialing on repeater stations).

This indeed is a fortunate period in which to enjoy the privileges of being a radio amateur!

Turn a deaf ear to the prophets of doom. We "never had it so good." And the future looks even brighter!

Greet 1972 with the resolution to participate positively in the institution of amateur radio. Resolve to have 1972 terminate with amateur radio a better avocation as the result of your year's operation.

**PPRAA DIRECTORS****PRESIDENT**

George Kowalski  
5320 Copper Drive 80907

WØGCH  
596-0164

**VICE PRESIDENT**

Charles E. Myers  
1120 Yosemite Drive 80910

WAØZCS  
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V7LKD  
634-4751

Julian D. Cornell  
721 Lansing Drive 80919

WØMCT  
596-4216

\*\*\*\*\*  
next three issues of Zero Beat, we intend, from time to time, to reprint other articles by Bob which have appeared in Grid Leak with the idea that they, too, will be of interest and help to Zero Beat readers.

Our thanks to Grid Leak for the use of these informative articles and our special thanks to Bob (as many Grid Leak readers must have thanked him) for writing these fine articles.

Would that Bob was a member of the writing staff of Zero Beat--or that some knowledgeable members of PPRAA might come up with some comparable articles for us to "originate"--perhaps we might even persuade Bob and Ollie to move to the Springs and Bob to take the job of editing Zero Beat off of our hands--hi, hi!!

-o-

Many a reporter and editor, faced with a deadline, has written a story in advance, hoping that when the event takes place it will happen in the same manner in which the story was written.

If the writer is lucky, the event takes place in the way it was written--if he happens to be "unlucky"--well, it just doesn't happen that way.

Such is the situation regarding the story of the moving of the club station which appeared in the January Zero Beat. We actually had to get it to the printer the week before the moving was to take place.

Well, as can well be seen by the story in this issue we were "unlucky"--the move didn't take place as written. The only thing we can say is "our apologies--you can't win 'em all!!"

--Frank, WØHWH



Amateur Radio  
News Service



## ROSIE'S REPORTINGS

By

Rosemarie Lewis  
WAØMNL

WØCZL, Bonnie Lewis, has been elected vice president of the Colorado YLs. WAØDGL, Larry, and Bonnie, who have been living in Pueblo since they returned from California some time ago, recently returned to Colorado Springs to live.

-rr-

The February meeting of the Colorado YLs will be at the home of WAØWAD, Ollie Shriner, in Pueblo. Date--February 12 at 1 p.m. All interested gals are invited to attend.

-rr-

Florence Kaplicky returned recently from a four week trip through the West Coast. She made acquaintance of her new grandson, visited friends and relatives along the way to and from Portland, Oregon.

-rr-

KØSLN, John Felix, and YF, Barbara, are proud grandparents. Daughter Sheryl and her OM Rich became the parents of a son, Lowell. They live in Provo, Utah. John and Barbara celebrated their 25th wedding anniversary February 5. Congratulations!

-rr-

WØMCT, "Doc" Cornell, revamped his ham shack. He designed it for convenience and comfort and put in sound-proof tiles.

-rr-

Ron Skowland, WØN9HYY/Ø, reports he has not taken any test for a higher class ticket. However, he is working hard to take the trip to Denver. (My apologies, Ron and Rosie--see what happens when I try to write your column for you, Rosie?--Frank).

-rr-

Fred Schanberger Jr. passed his General Class exam and got "that" ticket. It took six weeks and one day, but it's dated on his birthdate, which Fred says will help him remember the time when renewal is due. (Rosie, you didn't list his new call, but since he was WØDZP, suppose that now makes him WBØDZP--Frank). His younger brother is WØGJB.

-rr-

WAØWYJ, Elmer Schladweiler, has been "bitten" by the RTTY bug and with the help of WØHXK, Paul Snowden, is getting gear on the air.

-rr-

Heard on a morning net--"Kittens to give away."

-rr-

Arleen Bacon has received her novice call--WØGKN.

-rr-

A nice article appeared in the Colo-

rado Springs Gazette Telegraph citing the excellence WØHWH, Frank Craw, received for Zero Beat editorials and technical articles from the Amateur Radio News Service.

-rr-

The Colorado YLs are sponsoring the sale of magnetic call plate signs. They are approximately three and a half by thirteen inches. They have raised call letters on a white background, and they are magnetic. Cost per sign--\$3. Contact any Colorado YL or contact me at 2018 W. Uintah or phone 632-5721 in Colorado Springs (80904).

-rr-

WØLRN, But Thompson, of Littleton and YF Marilyn spent a weekend in Colorado Springs and were the coffee guests of WAØERA/MNL, with WAØYNP, Maury Wunderlich and YF Alice attending also.

-rr-

WØSIN, Chic Cotterell, the Rocky Mountain Division ARRL director, reports that the ARRL has a new president, WØTAK, Harry Daniels, of Long Island, New York.

-rr-

The following officers were elected at the last meeting of the Pueblo Ham Club: WØMHH, Dwayne McCrary, president; KØPHF, Bob Heptig, vice president; WØRSA, Ed Ehlis, treasurer, and Betty McCrary (no call), secretary.

## PPRAA Auction

(Continued from Page 1)

- Get a nice Valentine card for the wife to remind her of that annual day the Monday after the meeting.

- Further please the (XYL, YF, SWOOP--take your choice) by cleaning out the junk box of that unused electronic item or items you have no use for and which may be just the thing someone at the auction may be looking for.

- Bring along plenty of the "folding green" stuff so that you, too, can go home with "just what I needed!" Maybe the wife won't notice the new stuff in the junk box--at least if you don't use it as planned, perhaps she won't start "nagging" you about it until you can get rid of it at the next auction.

- Come prepared to do some "fancy bidding" you may have to to get the item that you want!

-o-o-o-o-

## Station Move

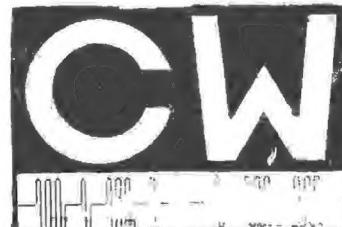
(Continued from Page 1)

the time when the club met at the Red Cross center, will remember it as the room having two sinks. After the room has been "renovated" by the installation of carpeting and arrangements for some covering for the sinks, the club station will be moved into this room.

George Kowalski, area Emergency Coordinator and station trustee, has issued an invitation to anyone having an SSB around gathering dust, to set it up at the station at the Red Cross Center. Also needed at the station is a radioteletype terminal unit similar to the ST6, according to George.

-o-o-o-o-

Most of us have two chances of being rich--slim and none.



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# President's Column

Hope most of you had antennas which survived the winds we've been having recently. Don, WØITU, says his Quad is now a "mono."

The folks to UZO and crew, our repeater antennas on Cheyenne Mountain are holding up surprisingly well. But if the wind don't get you, the flu do....

I was going through the club records the other evening prior to passing them on to our club historian Doc, WØMCT. It struck me that they had the same problems back in 1940 that we have today--whether or not to put on next

year's convention, how to encourage membership, how to get everyone to pay their dues, how to improve the Field Day scores, etc. Much work was put into the club back then by people such as Carol Schisler, Cecil Wood, Jim Reynolds and Nipper, to make our fine club what it is today.

Bring your goodies and be prepared for some fast bidding (we have to be out of the building by 10 p.m.) at the best ham auction in Colorado.

73,  
---George, WØGCH

## = = = The Earth's Crust = = =

(The following very interesting article, reprinted from the January 1972 Minnesota MARS News Letter, was written by Luverne Johnson, AØKPS, of Peterson, Minn. According to the News Letters, KPS is an ordained minister, a very talented artist and "a journalist of exceptional ability." ---Frank, WØHWH.)

-o-

We do not know the precise relationship of earth and moon from antiquity. Astronomers do know, however, that the moon is ever so slowly moving away from the earth.

Until recently, one theory had the material forming the moon being ripped from the earth, producing a terrestrial valley thousands of square miles in area, which later became the Pacific Ocean.

The Apollo moon program study of data and lunar soil samples have tended to rule out this theory. The origin of the moon remains clouded in mystery. It is not also known how the earth and moon formed their present orbital system relationship. One group of scientists has the moon being captured about two million years ago by the earth's gravitational tug.

We cannot yet be certain if this actually happened--quite likely, but we don't know. We note with interest, however, the gravitational influence of the moon upon the earth.

There are two simultaneous tides on our planet. The moon's gravity pulls the water on the earth side facing the moon. At the same time, another tidal action forms on the opposite side of the earth. Thus, within any twenty four hour period, there are two tides at any location on our earth.

Recent man-made satellites have revealed a general bulge at the earth's equator and a slight flattening at the poles. The variation from a true sphere is close to thirty miles. Centrifugal force, due to the spinning orbit around the sun, partially explains this bulge. But the remaining influence and

reason for this proturbation is the gravity of the moon.

What many people don't realize is that the gravitational pull of the moon is slowing the earth's rate of spin. This retardation is slow, so gradual that it accumulates to perhaps only three to five minutes every billion years.

We might say, "So what?"

There doesn't seem to be much to worry about. Not too much---except!

When this attraction slows the earth, it produces stresses and strains in the  
(Continued on Page 7)

## An Easily Constructed Capacity Checker

(From the Colorado/Wyoming MARS Newsletter.)

Every amateur radio operator, at one time or another, finds himself in the position of having to make repairs on his rig.

We all realize that once we have isolated the circuit in which the trouble is located, we must then locate the component in the circuit that is faulty. Locating faulty resistors, coils and fuses and switches is not too difficult because we can check for continuity on an ohmmeter. Most of us do not have a bridge for checking capacitors.

For this reason some components

## From 'Here and There'

A Decision Information Distribution System (DIDS) is being constructed at Edgewood Arsenal, Maryland, as the first of ten emergency warning stations in the Office of Civil Defense system. When completed, the entire system would conceivably warn the entire population--in 30 seconds--of nuclear attack or even severe storms or natural disaster. Another facet proposed is the mandatory inclusion in all new TV receivers of a special circuit that would "bring the set to life" on a special command pulse tone even if the TV set is turned off. (From "Auto Call" of the Foundation for Amateur Radio.)

-o-

For those of you who feel the postage rates and printing costs have soared so out of reason that sending QSLs is no longer feasible, here is perhaps the answer: For 4 cents each this bureau claims to be able to send all your QSLs anywhere in the world for you. If interested write: World QSO Bureau, 5200 Panama Avenue, Richmond, Calif. 94804. (From "W6SD Carrier" of the San Fernando Valley (Calif.) Radio Club.)

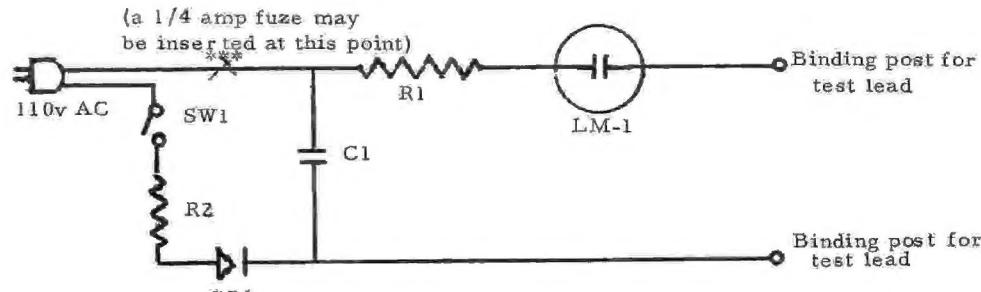
-o-o-o-o-

Education is something you get when your father sends you to college--but it isn't complete until you send your son there, too.

were gathered from the junk box and designed and built into a small capacitor checker for checking non-electrolytic type capacitors.

Quite often when we use the system of watching "needle fade" on our VOM, the fade is so slight or our attention is distracted and we miss it. In this checker the neon light will glow as the current passes through it. When testing a capacitor, the light will blink once or twice, while the plates are loading, and then will remain off. If the capacitor is not good the light will continue to blink.

When checking capacitors wired into circuits, one end must be disconnected.



R1 -- 47K 2w resistor  
R2 -- 330K 2w resistor  
LM-1 -- Neon lamp NE 51  
CR1 -- 1M3611 diode (not critical)  
SW1 -- ST toggle switch

C1 -- 8 or 10 mic capacitor 450vDC  
CR1 -- 1M3611 diode (not critical)  
SW1 -- ST toggle switch

## Indoor Weather Station

By Jim Peterson, WA0LVM

(From the Denver Radio Club "The Round Table.")

It seems that every day during a QSO, the old topic of weather always comes up. I don't know how you get your weather information, but I don't like going outside at 6 a.m. and the Weather Bureau line is perpetually busy or the weather has changed faster than the recording. Since I wanted to sit in my basement shack and take outside readings, I decided to build my own basic weather station.

If your junk box is reasonably well stocked and you use your imagination on the mechanical details, you can build a remote, reading wind direction, wind speed and outside temperature indicators.

The wind direction system consists of a wind vane turning a selsyn mounted on the roof. The remote selsyn is mounted on a panel and synched with the vane. A filament transformer supplies the power and the basic selsyns are available for around \$5 per pair.

The wind speed indicator consists of anemometer cups turning a small DC hobby type motor which acts as a generator. The output is read on a microamp meter which has switched resistors for two ranges. Calibration is done with the whole unit mounted on the car and the linearity readings checked at speeds to 70 mph. My meter is pretty well damped and the readings are quite steady with no needle spikes.

Outside temperature is read from a thermistor bridge circuit and has proven quite accurate. There are several schematics available. I used a GE circuit but there was an interesting one in the February 1971 Popular Science. I can read from -40 to 122 F in two ranges and it is truly a pleasure to keep warm and check the chill factor on cold windy days.

The next step would be to come up with an outside humidity indicator, but I now have the most important instruments.

Why not use your ingenuity and come up with your own unofficial weather station?

-o-o-o-o-

### RAMBLING REPORTER

(From the DRC "Round Table")

Electronics World and Popular Electronics merged in January. Both owned by the same company, have been drifting together. Now it's official.

Did you notice that Heathkit is going into the kitchen? Yep, now a kit of kitchen waste compactor. Who's wife will be the first to build one?

## Worth Of ARRL

(Continued from Page 1)

est of one of the many facets of amateur radio.

Many Hams look with suspicion on these organized groups, but without them Ham Radio would probably be phased out long ago in favor of the Citizen's Band type, where anyone with the fee could put a rig on a fixed frequency and operate without benefit of training or competence.

The American Radio Relay League has worked for over 50 years on behalf of Amateur Radio and is still the largest and best organized Amateur Radio Group in the world.

I am very proud to say that I am an official in ARRL and I am convinced that ARRL is the organization for Amateurs to work through to get action on the things that we want to happen. If ARRL is not doing the job you think it should be doing, the only way to change it is through the ballot box.

There are other international organizations for Amateurs such as the Amateur Radio News Service, Quarter Century Wireless Association, and many other regional groups all over the world.

One person cannot do much to change conditions but a group of concerned people can at times work miracles.

I believe that a large organization can work for that single member and make him an important cog in that big wheel.

-o-o-o-o-

Someone says he would rather hear a fellow say "I seen" when he really saw something than to say "I saw" when he ain't seen nothing.

EMERY STUDIO

## Heard on the Party Line

BY CHARLIE VORDERBERG

W0CCT

(Reprinted from the Amateur Radio News Service "Bulletin")



Confidence is that feeling you get before you call CQ.

-o-

If you think twice before you shout "Break, Break!" you'll never get into that QSO.

-o-

Next time you feel neglected as no one answers your CQ, just think of Whistler's father.

-o-

Most all of us hams need an XYL. Many things go wrong that we can't blame on the FCC or the ARRL.

-o-

Wouldn't it be great if we had as much fun at radio club meetings as the XYL thinks we did? (But we do have at PPRAA meetings, don't we?)

-o-

Did you hear about the YL who had the PPTT stick in the "on" position--and didn't know it for 55 minutes?

-o-

A Hamfest is a technique for distributing all the junk from your ham shack to all the other shacks in your area.

-o-

Watch what you say on the bands. You never get a second chance to make a first impression.

-o-

YL: "A husband like yours must have been hard to find." XYL: "He still is."

-o-

Did you ever hear of "Party Line Wine?" It is made from sour grapes.

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# UNDERSTANDING COMPUTERS

From the Pueblo Ham Club "Grid Leak"

As Father Time marches on, each of us is exposed more and more to computers and their functions. As a general rule, we only see the result of the computer actions in the form of our paychecks, bank accounts, bills from the large utility companies, etc.

First it must be remembered that a computer is a passive device. It will not do anything or produce any results on its own. However, upon command, it can produce any function that has been "programmed" into it.

Note the use of the word "Programmed." The use of the word "program" for our purposes means "to set up the machine to perform a function." When you turn on your radio you have "programmed" it to receive a signal, when you change frequency you have changed the "program." The computer works in the same manner. Hundreds and even thousands of simple circuits such as on/off switches program the computer to give a result.

There are several terms you should be familiar with.

First is Binary Arithmetic and will constitute the balance of this first article.

Binary Arithmetic is the science of arithmetic using a numbering system composed of only two marks.

The decimal system that we are all familiar with uses 10 marks, i.e., 0 thru 9. The Binary system only uses 2 numbers and for the purpose of this discussion will be assigned the digits 0 and 1.

Before we go into the actual arithmetic, let us understand why the Binary system is used in the computer.

All data used in the computer is in the form of numbers. These numbers are in the form of ones and/or zeros.

## QSO Party

(Continued from Page 1)

"6. Appropriate awards will be given. These awards are furnished by the sponsoring club in each state, so there will not necessarily be any uniformity. It is possible that additional awards will be made to the winners of the 'overall' contest.

"7. Full log data, including the exchanges, should be sent to Bill Wageman, K5MAT, 35 San Juan, Los Alamos, N. M. 87544 no later than May 1, 1972. Include sase for awards and/or copies of the results. At least one extra stamp should be inserted in the sase for use if necessary. Unneeded stamps will be returned."

As there can be a whole bunch of ones and zeros in a number, it is very difficult for a human to comprehend these numbers, however, it must be remembered that a human has only one brain capable of storing a lot of information and a computer has a large number of "brains," however, each "brain" can only store two things, i.e., 1 or 0 --putting it another way, "on or off," or positive or negative.

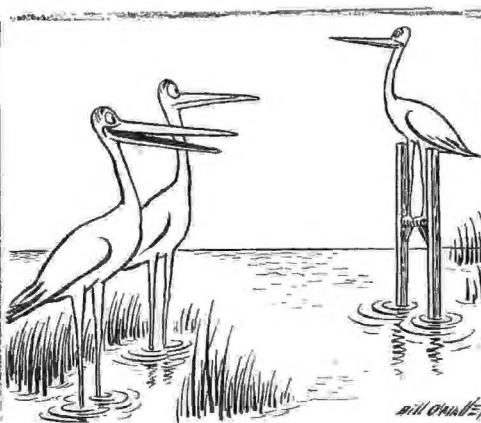
Let us observe some Binary numbers and their decimal equivalents:

Binary Number	Decimal Equivalent
0	0
1	1
10	2
11	3
100	4
101	5
110	6
111	7
1000	8
1001	9

There are three rules used in adding Binary numbers (1) 0 plus 0 equals 0. (2) 1 plus 0 equals 1. (3) 1 plus 1 equals 0 with a carry of 1. All right now, let us set up the problem of 3 plus 4 and solve it both in the Binary and decimal system.

Binary System	Decimal System
11	Equals 3
100	Equals 4
111	Equals 7

Simple, isn't it? Don't try to make it complicated because you must remember that you are working with only two digits and it cannot get too complicated. Let's try it again and this time we will carry a 1.



"He's on stilts for two reasons--does not like to get his feet wet and he knows three Hams with high power rigs are using this lake for a ground and he isn't taking any chances of any of them feeding any of that high power to ground so that he'll get a fatal shock."

Binary System	Decimal System
11	Equals 3
101	Equals 5
1000	Equals 8

Remember rule (3) 1 plus 1 equals 0 and carry 1.

One last problem:

Binary System	Decimal System
1	Equals 1
11	Equals 3
101	Equals 5
1001	Equals 9

Subtracting Binary numbers requires the following rules: (1) 0 from 0 equals 0; (2) 1 from 1 equals 0; (3) 0 from 1 equals 1; (4) 1 from 0--put down 1 and then change the numbers in the upper row (from right to left) until you change a 1 to a 0.

OK, now, let us try some subtraction.

Binary System	Decimal System
111	Equals 7
- 11	Equals -3
100	Equals 4
- 110	Equals -6

Multiplication is easy, just follow these basic rules: (1) 1 times 1 equals 1; (2) 0 times 1 equals 0; (3) 1 times 0 equals 0; (4) 0 times 0 equals 0.

Binary System	Decimal System
11	Equals 3
X 10	Equals X2
00	Equals 0
11	Equals 6
110	Equals 0

Try it again:

11	Equals 3
X11	Equals 3
—	—
11	Equals 9
11	Equals 0
1001	Equals 9

Now that we are experts in Binary Arithmetic, we will let it soak in real good for a month and will pick it up again next month with Logic Circuits which are "brain" to the computer.

FOR SALE--HT40 and SX140. SB110 (6 meter SSB transceiver). HW17. All have power supplies. Also an 11 element 2 meter beam (brand new, still in original box). Make me an offer. Ron Schoolard, K1THS. Phone 597-1241.

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Then there was the president who, inspecting a branch of the firm that wasn't doing well, told the manager to hire some ballet dancers so someone would be on their toes.

## The Earth's Crust

(Continued from Page 4)

earth's crust. These stresses build up until an adjustment has to take place.

The mass of earth piles up, as the ocean tides. Solid land, however, has more friction and resists the pressure more than water. Through countless ages, the pressures and forces of the moon have been building in the earth's crust. The present buildup may have been coming in perhaps the last half billion years or so, as one group of scientists has theorized. Perhaps some small adjustments have occurred within that time. The big build-up, however, has been long in the making. The earth's solid crust is lagging the moon's pull more and more.

Something will have to give. It will likely happen very suddenly. Science News of May 7, 1966, reported a 200 mile wide crack in the Pacific Ocean. This may have been from one of these great adjustments. We can't be sure, but possibly.

An earthquake produces cracks in the ground, a couple of feet wide. It is hard to imagine a gigantic quake which would leave cracks hundreds of miles wide. If such occurred, ocean waters would pour into the crack(s) toward the molten interior and the result would make even the most terrible weapon of man seem a harmless cracker.

Likely that most (though not necessarily all???) of the earth's crust could suddenly shift to adjust and compensate, correcting for the slowly built-up pressure. This could be a possible explanation for the rapidly frozen tropical plants and animals in Siberia and both polar zones. Elephant-size creatures have been found with grass they were eating well preserved in their mouths. Such animals could have possibly been in a more equatorial zone when the crust suddenly shifted north, or south, quick freezing them in snow, ice and volcanic ash, produced in such a dramatic and sudden crustal shift. There is also the possibility that these animals permanently lived in the polar regions under tropical conditions, because of a completely different earth environment existing at the time.

Let's presume further the matter of build-up crustal pressure. Such being the case, there have likely been some minor adjustments in the near past. Could the Genesis flood account, during the day of Noah and his Ark, be a result of a minor crustal adjustment? Could another somehow have occurred when the sun stood still in the sky (Joshua chapter ten in the Bible) while Israel went out to win a battle?

Lately there have been not only more but also more intense earthquakes. Scientists also tell us that the earth's magnetic field is reversing. In a few hundred years the present North

pole will be the South pole. This happens when there is a movement, a change in position and relationship between the earth's molten core and its mantle. Even a small movement of the liquid core, relative to the crust, would produce more severe earthquakes and more active volcanoes.

The build-up has been long in coming. Perhaps the dramatic shifting of the earth's crust is near, very close. Could this have reference to mention in the Bible that the sun and moon will be darkened. The moon will also, at one point, become as blood. This could happen if an enormous amount of volcanic ash were spewed into the atmosphere simultaneously with other dramatic events in nature.

We don't know many answers, just questions. But we do know there will be a sudden shift in the earth's crust, coming---sometime in the future.

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### THE LAW AT ITS BEST!!

(From Kitchener-Waterloo Bulletin)

Before his daring escape from prison, an infamous criminal had been photographed from four different angles. The FBI sent copies of the photos to Police Chiefs all across the land with the orders to notify Washington the moment an arrest was made. The next day, the Bureau received a teletyped reply from the sheriff of a small southern town: "PICTURES RECEIVED. ALL FOUR SHOT DEAD WHILE RESISTING ARREST."

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A man bought a parrot and in trying to make him talk he kept repeating "Hello!" "Hello!"

Finally the parrot opened one sleepy eye and asked, "What's the matter? Is the line busy?"

## CBers Are Indicted

(From the Amateur Radio News Service "Bulletin")

It is presumed that almost everyone has seen the news item circulated by AP concerning the indictment of 21 members of a CB club at Des Moines, Iowa. There is one thing about this particular action that is a lot different than similar actions in the past.

It should be specifically noted that this action was taken by a federal grand jury and is not an action of the FCC. The report in the paper states that this is the first time a federal grand jury has taken such an action.

Those we have read in the past have all been FCC actions, and the outcome of many of them has been a mere slap on the wrist with an admonishment to not do it anymore. But this one is different.

Instead of the mild action normally following, this case may well end before a regular judge and the sentences meted out, if found guilty, something else again from the FCC treatment.

The indictment charges the usual items--using call signs of their own, high antennas, hobby use, communication with unlicensed stations, talking more than 150 miles distant, power input more than 5 watts, etc.

And the final paragraph (thank goodness) differentiates amateurs (which they call hams) from CBers.

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Americans characterize unintelligible speech by saying "That's Greek to me," the Russians and the Roumanians by "That's Chinese to me," the French by "That's Spanish to me," and the Poles by "I'm listening to a Turkish sermon."

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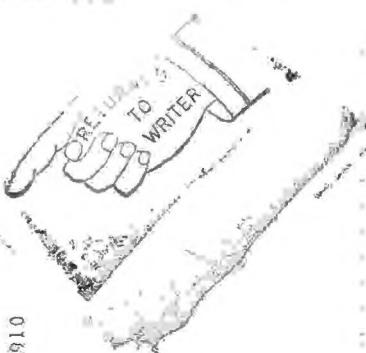
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